

PCG-NV170/NV170P/**NV190/NV190P**

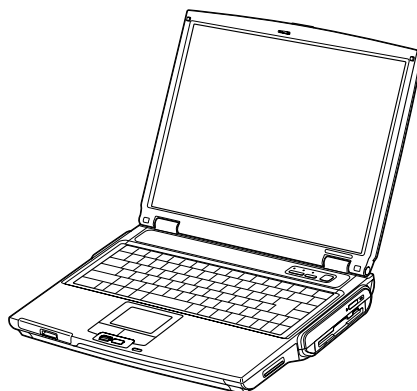
SERVICE MANUAL

For American Area

*US Model
Canadian Model*

Ver 7-2003I

Revision History



Illust : PCG-NV170P

Lineup : PCG-NV190P ▲[MA]
PCG-NV190 ▲[MA]
PCG-NV170P
PCG-NV170



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NOTEBOOK COMPUTER

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Caution Markings for Lithium/Ion Battery - The following or similar texts shall be provided on battery pack of equipment or in both the operating and the service instructions.

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

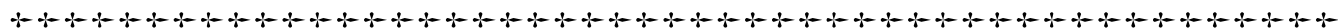
CAUTION: The battery pack used in this device may present a fire or chemical burn hazard if mistreated. Do not disassemble, heat above 100°C (212°F) or incinerate.

Dispose of used battery promptly.

Keep away from children.

CAUTION: Changing the back up battery.

- Overcharging, short circuiting, reverse charging, mutilation or incineration of the cells must be avoided to prevent one or more of the following occurrences; release of toxic materials, release of hydrogen and/or oxygen gas, rise in surface temperature.
- If a cell has leaked or vented, it should be replaced immediately while avoiding to touch it without any protection.



Service and Inspection Precautions

1. Obey precautionary markings and instructions

Labels and stamps on the cabinet, chassis, and components identify areas requiring special precautions. Be sure to observe these precautions, as well as all precautions listed in the operating manual and other associated documents.

2. Use designated parts only

The set's components possess important safety characteristics, such as noncombustibility and the ability to tolerate large voltages. Be sure that replacement parts possess the same safety characteristics as the originals. Also remember that the \triangle mark, which appears in circuit diagrams and parts lists, denotes components that have particularly important safety functions; be extra sure to use only the designated components.

3. Always follow the original design when mounting parts and routing wires

The original layout includes various safety features, such as inclusion of insulating materials (tubes and tape) and the mounting of parts above the printer board. In addition, internal wiring has been routed and clamped so as to keep it away from hot or high-voltage parts. When mounting parts or routing wires, therefore, be sure to duplicate the original layout.

4. Inspect after completing service

After servicing, inspect to make sure that all screws, components, and wiring have been returned to their original condition. Also check the area around the repair location to ensure that repair work has caused no damage, and confirm safety.

5. When replacing chip components...

Never reuse components. Also remember that the negative side of tantalum capacitors is easily damaged by heat.

6. When handling flexible print boards...

- The temperature of the soldering-iron tip should be about 270°C.
- Do not apply the tip more than three times to the same pattern.
- Handle patterns with care; never apply force.

Caution: Remember that hard disk drives are easily damaged by vibration. Always handle with care.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE \triangle SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

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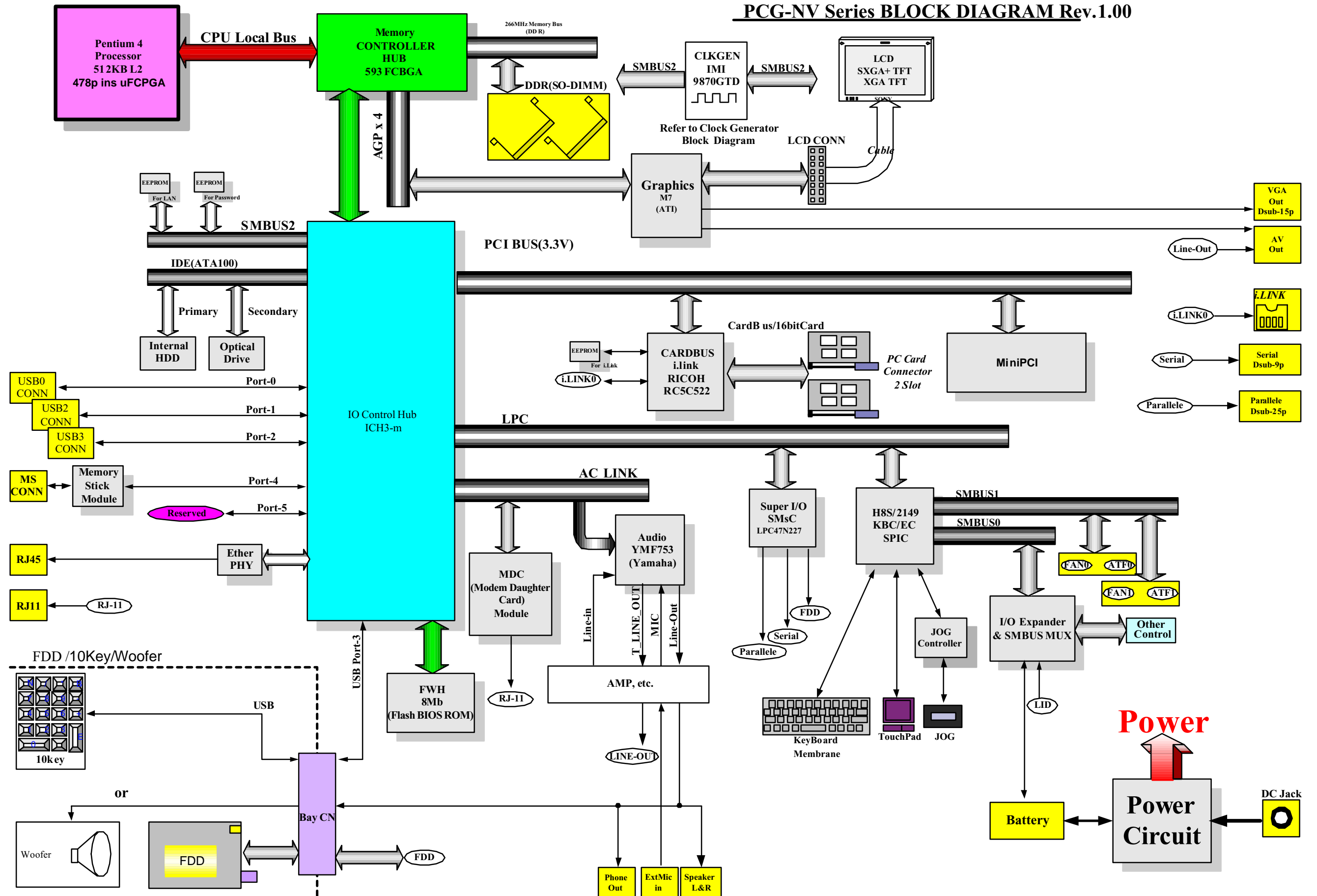
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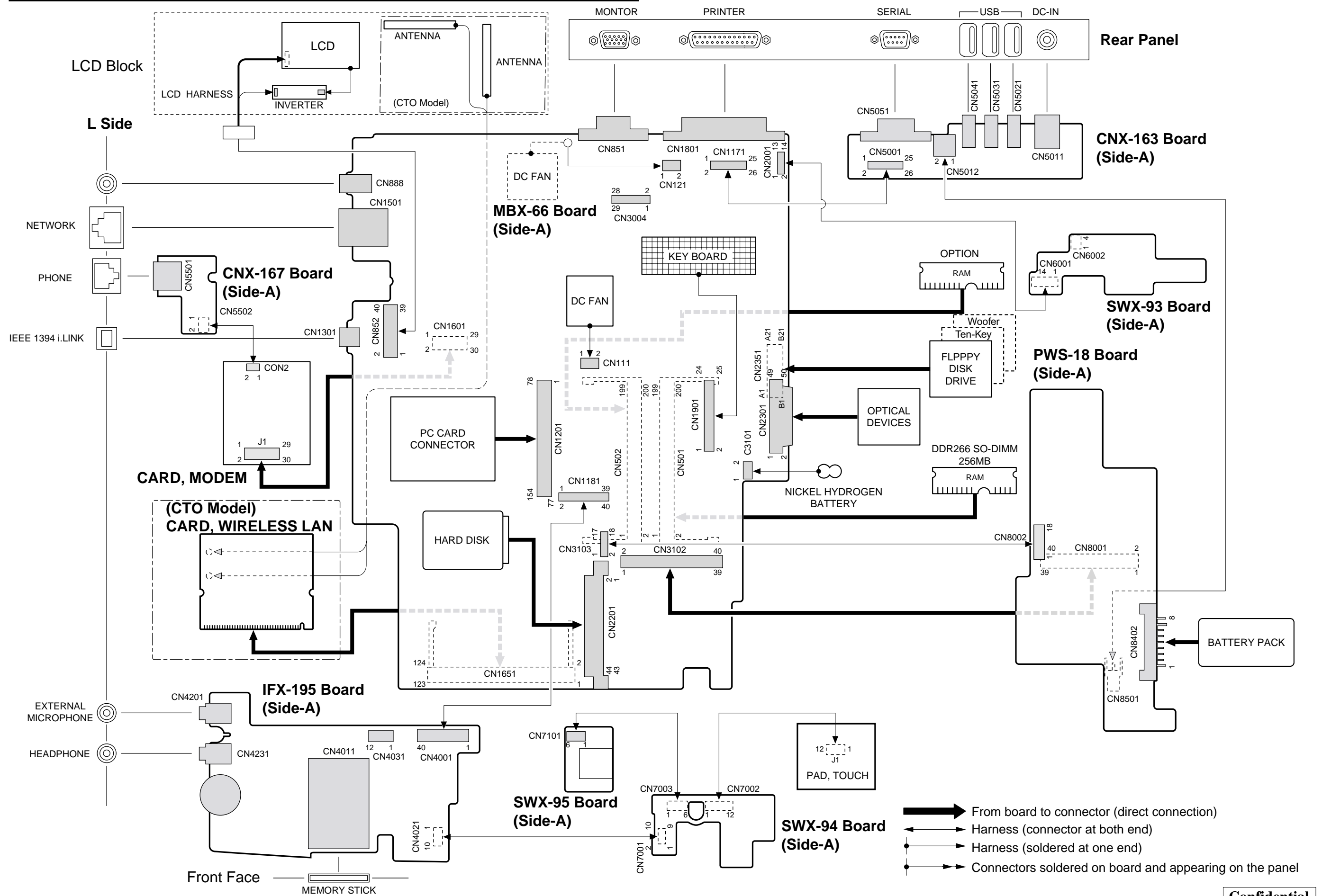
History of the changes is shown as the
“Revision History” at the end of this data.

CHAPTER 1. BLOCK DIAGRAM

PCG-NV Series BLOCK DIAGRAM Rev.1.00



FRAME HARNESS DIAGRAM



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CHAPTER 3.

EXPLODED VIEWS AND PARTS LIST

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked “ * ” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- When two or more parts are shown in parallel, use the part described first as the main part.
- The indication [CH] is used for identification of part type.
- Regarding the boards of this model, the discrete parts on the boards cannot be replaced. However, Some connectors can be replaced.

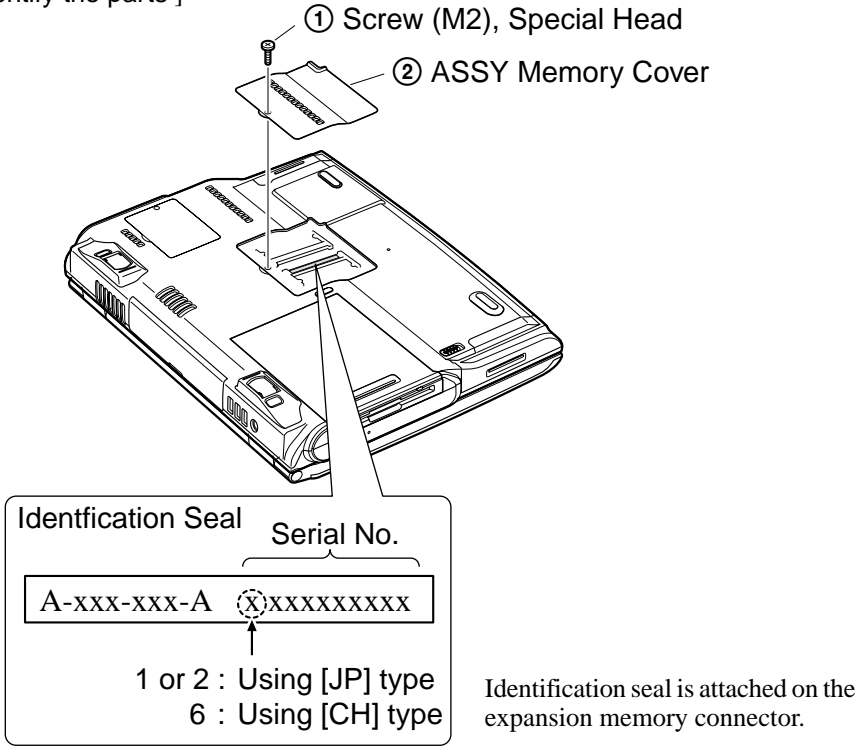
The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

How to use properly the repair parts.

There are some parts that use the 2 types ; the [CH] parts or alternately the [JP] parts, in this series.
Use the [CH] repair parts for the [CH] type product, vice versa.

[How to identify the parts]



[Repair part description example]

Ref.No.	Part No.	Description
999	A-8110-582-A	[CH]...MBX-66 ASSY (C) (S)
999	4-8067-424-A	[JP]...MBX-66 ASSY (S)

*About Repair level of mounted board.

- JP type... Component level service is possible. Refer to this manual for details.
- CH type... Do not execute the component level service in principle.
However, some of the connectors can be repaired by the component level service.
Refer to “Connector Section” of this manual for details.

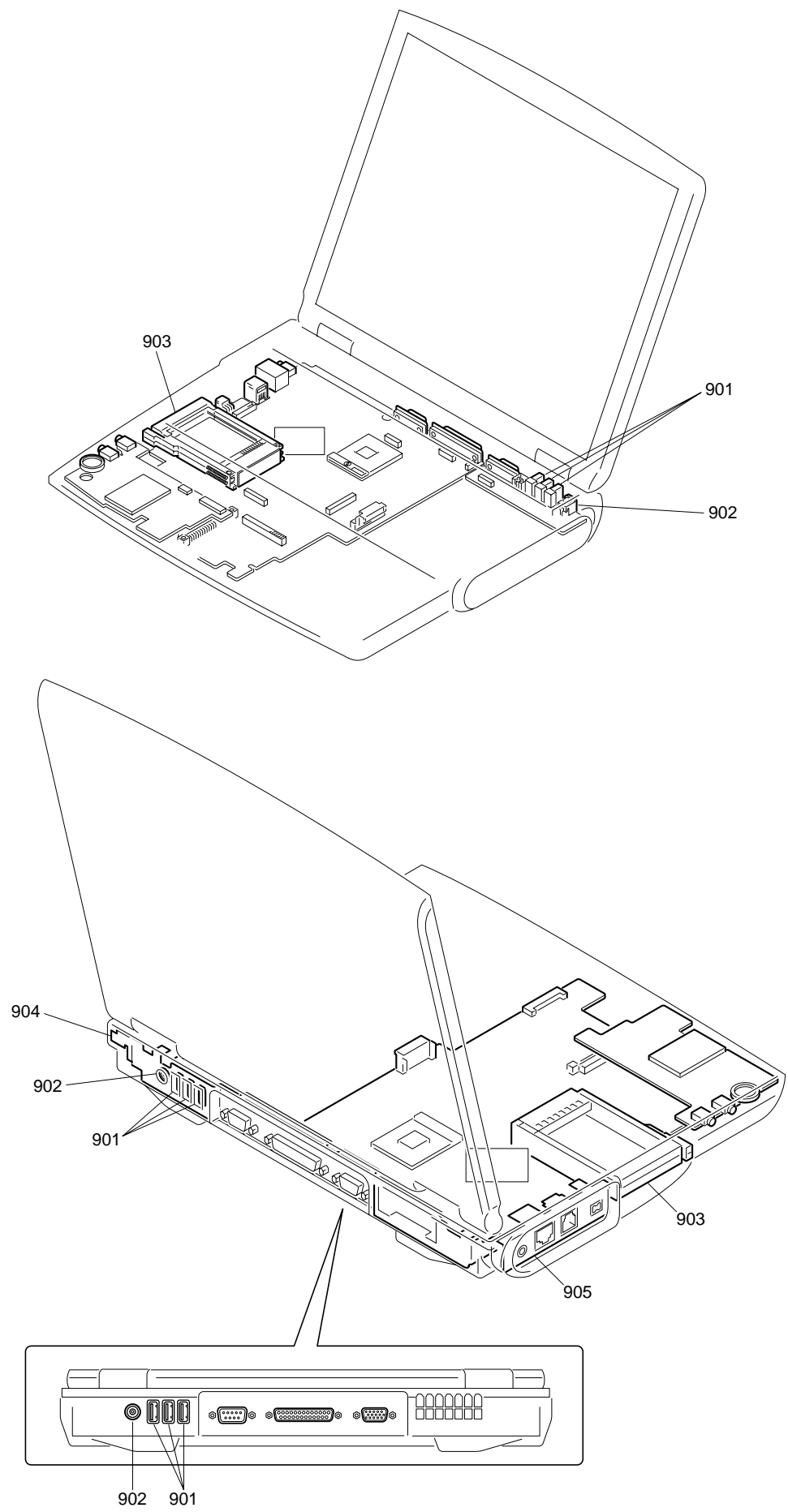
3-1. Main Section

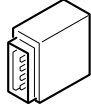
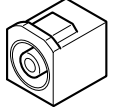
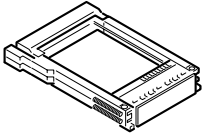
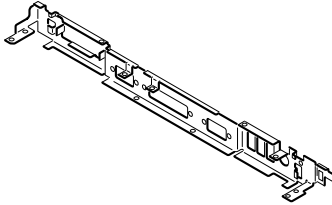
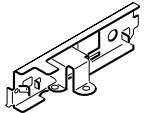
Ref.No.	Part No.	Description	Ref.No.	Part No.	Description	Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
1	X-4624-632-2	ASSY MEMORY COVER	56	4-662-684-01	THREMAL SHEET NORTH	106	4-665-228-01	SPACER PRH	137	4-661-129-01	BAY K SPRING
2	4-662-679-01	INSULATOR MEMORY COVER	57	6-702-111-01	(NV170/NV170P)...IC RH80532GC025512	107	4-665-728-01	COPPER TAPE JOG	138	4-661-134-01	BAY K BEZEL
3	X-4624-633-2	ASSY MINI PCI COVER				108	4-665-016-01	COPPER TAPE BOTTOM A	139	4-662-551-01	BAY K COVER
4	4-661-307-01	[JP]...FOOT FRONT (*3)	57	6-702-112-01	(CTO/ NV190/NV190P)... IC RH80532GC029512	109	4-665-017-01	COPPER TAPE BOTTOM B	141	4-662-379-01	FIN GND
4	4-661-307-11	[CH]...FOOT FRONT (*3)				110	4-665-018-01	COPPER TAPE BOTTOM C	142	4-662-378-01	USB GND
5	4-662-680-01	INSULATOR MINI PCI	58	X-4624-710-2	I/O BRACKET ASSY	111	4-665-022-01	CUSHION HDD GUIDE TOP	B1	4-665-205-01	SPECIAL FLAT HEAD (EG GRIP), M2
6	4-661-671-02	INSULATOR BOTTOM	59	4-660-835-01	THERMAL SHEET CPU	112	4-665-023-01	CUSHION BOTTOM B	B2	4-635-966-01	SCREW (HEX)
7	4-661-164-11	MODEM COVER				113	X-4625-033-1	ASSY FINGER HDD	B3	4-641-726-12	SCREW (M2), SPECIAL HEAD
8	4-661-113-01	HDD DOOR	60	1-824-072-21	FFC (26PIN)	114	4-656-131-01	SHEET MODEM	B4	4-661-107-01	STAND OFF M2X5
9	4-664-566-01	CUSHION HDD BRACKET F	* 61	4-654-119-11	PLATE (DC)	115	4-641-630-21	COVER BAY HOLE	B5	4-644-637-42	GRIP, M2 EG
			63	4-662-685-01	THERMAL SHEET PW						
* 10	4-653-799-02	BRACKET HDD	64	4-661-674-02	INSULATOR PWS	120	1-695-514-21	[JP]...JACK (SMALL TYPE) 1P	B6	4-642-852-21	+B M2
11	4-653-801-02	SHEET HDD	65	A-8067-249-A	[JP]...COMPLETE PWB PWS-18	121	1-793-162-11	[JP]...JACK, SMALL TYPE	B7	4-662-693-03	GRIP M2.6 S-HEAD (EG)
12	A-8059-344-A	ASSY HDD 30GB (T,20,F) (S)				122	1-779-745-21	[JP]...JACK, DC	B8	4-644-637-32	GRIP, M2 EG
12	A-8059-136-A	(CTO)...ASSY HDD 40GB (H,20) (S)	65	A-8110-585-A	[CH]...ASSY PWS-18(C)(S)	123	1-815-422-12	[JP]...CONNECTOR, USB (A)	B9	4-646-807-11	0 PLATE M2.5 (FDD)
13	X-4624-638-2	[JP]...ASSY FOOT REAR (*4)	66	4-662-537-01	BLIND FPD	124	4-661-173-02	JOG BEZEL	B10	4-635-301-01	SCREW M3X4
			67	1-823-101-11	CABLE, FLEXIBLE FLAT						
13	X-4624-761-1	[CH]...ASSY FOOT REAR (*4)	68	X-4624-635-1	ASSY LATCH DETECTOR	125	4-661-088-01	FDD LATCH LEVER	B11	4-654-811-01	SCREW M3
14	X-4624-634-2	ASSY SIDE I/O DOOR	69	6-600-080-01	IC M470L3224BT0-CB0	126	4-661-090-01	FDD LATCH SPRING	B12	4-652-498-01	+B M2 (NOJI)
15	4-662-543-01	LABEL SIDE I/O			(DDR266 SO-DIMM 256MB)	127	4-661-093-02	FDD LATCH BUTTON	B13	4-645-177-01	SCREW (M1.7X3.5)
16	4-663-865-02	CUSHION SIDE I/O	69	6-600-116-01	IC M470L3224DT0-CB0	130	A-8059-514-A	ASSY BAY KEY	B14	4-661-159-01	STAND OFF M2X8.5
* 17	X-4624-741-1	ASSY 2ND FAN GUIDE				131	4-661-125-01	BAY K TOP BRACKET	B15	7-622-205-05	NUT M2 TYPE2
			70	1-960-827-61	HARNESS (2 PIN)						
18	1-763-843-11	FAN, DC (SECOND)	71	1-761-380-23	CARD, MODEM	132	1-816-577-11	CONNECTOR, BAY 4P 1MM	B18	4-665-648-01	SCREW M2 EG GRIP WASHER
19	4-662-704-01	SHEET 2ND FAN	72	1-763-842-11	FAN, DC (CPU)	133	1-824-587-11	FFC (4P)	B20	4-639-112-01	SCREW M2X4
20	4-662-542-01	LABEL I/O	73	4-664-521-01	SHEET FF	134	1-477-344-11	KEY UNIT, 10			
21	4-661-116-02	I/O DOOR				135	4-661-127-02	BAY K BOTTOM			
* 22	4-661-111-01	SUPPORT BRACKET	* 74	X-4624-727-1	PALMREST BRACKET L ASSY	136	4-661-128-01	BAY K FOOT			
			75	4-664-050-01	SHEET SUPPORT SCREW						
23	X-4624-631-2	ASSY BOTTOM HOUSING	76	1-477-230-11	KEY BOARD UNIT (U)						
24	4-662-375-01	[JP]...FOOT CENTER (*3)	77	1-825-142-11	INTERNAL SPEAKER (2230)						
24	4-662-375-11	[CH]...FOOT CENTER (*3)	78	X-4624-637-2	ASSY HOOD KEYBOARD						
25	4-661-112-01	BATT DOOR LINK									
26	4-661-115-02	BATT DOOR	79	1-824-072-31	FFC (14PIN)						
			80	A-8067-243-A	[JP]...COMPLETE PWB SWX-93						
27	4-664-311-02	BATT CUSHION	80	A-8110-586-A	[CH]...ASSY SWX-93(C)(S)						
28	1-756-038-11	BATTERY, NICKEL HYDROGEN	81	4-661-171-12	(W-LAN/ NV190/NV190P)...W-LAN SWITCH						
29	4-664-565-01	CUSHION BOTTOM C	81	4-662-547-12	(NV170/NV170P)...W-LAN SWITCH COVER						
30	A-8059-969-A	ASSY BAY FD (TE)									
31	X-4624-627-2	ASSY FDD BOTTOM	82	4-661-172-02	TP BEZEL						
			83	1-796-319-21	PAD, TOUCH						
32	1-816-578-11	CONNECTOR, BAY 26P 1M	84	1-400-255-11	(W-LAN/ NV190/NV190P)...FERRITE CORE						
33	1-824-587-21	FFC (26PIN)	85	X-4624-636-1	ASSY PALMREST HOUSING						
34	4-661-092-01	FDD TOP BRACKET	* 86	4-662-681-01	HEAT SINK PW						
36	1-796-231-21	FDD (FD-07-7760)									
37	4-661-087-02	GROUND PLATE C(PA)	* 87	X-4624-728-2	PALMREST BRACKET R ASSY						
			88	4-662-686-01	THERMAL SHEET HS-PW						
* 38	4-661-091-11	BRACKET C	89	4-663-780-01	(W-LAN/ NV190/NV190P)... PALMREST BRACKET R TAPE						
39	1-796-455-11	COMBO DRIVE (UJDA730)									
40	X-4624-626-1	ASSY CD-ROM BEZEL	* 90	4-661-120-01	TOUCHPAD BRACKET						
41	1-961-764-11	HARNESS (DC)	91	1-823-813-11	CABLE, FLEXIBLE FLAT 12P						
42	1-761-564-11	(W-LAN/NV190/NV190P)... WIRELESS LAN CARD									
			92	1-824-072-71	FFC (6PIN)						
43	4-664-567-01	CUSHION HDD GUIDE	93	A-8067-245-A	[JP]...COMPLETE PWB SWX-94						
44	4-661-110-02	HDD GUIDE	93	A-8110-587-A	[CH]...ASSY SWX-94(C)(S)						
45	4-661-673-01	INSULATOR PC-CARD	94	1-824-072-51	FFC (10PIN)						
* 46	4-661-167-01	HDD SUPPORT GROUNDING	* 95	4-664-347-01	JOG PLATE						
47	4-661-672-02	INSULATOR HDD									
			96	A-8067-247-A	[JP]...COMPLETE PWB SWX-95						
48	A-8067-424-A	[JP]...ASSY MBX-66 (S)	96	A-8110-588-A	[CH]...ASSY SWX-95(C)(S)						
48	A-8110-582-A	[CH]...ASSY MBX-66(C)(S)	97	1-824-072-11	FFC (40PIN)						
49	A-8067-240-A	[JP]...COMPLETE PWB CNX-167	98	A-8067-251-A	COMPLETE PWB IFX-195						
49	A-8110-584-A	[CH]...ASSY CNX-167(C)(S)	99	4-661-551-22	(W-LAN/ NV190/NV190P)...LENS COVER						
50	X-4624-725-1	SIDE I/O BRACKET ASSY									
			99	4-661-551-32	(NV170/NV170P)...LENS COVER						
51	4-661-163-01	LAN DOOR	102	4-664-312-01	SHEET JOG						
52	4-662-544-01	SHEET SIDE I/O	103	4-665-113-01	SHEET TP-BRACKET BT						
53	1-816-371-11	CONNECTOR, PC CARD(EJECT,RIGHT)	104	4-665-226-01	SPACER TPB						
54	4-661-151-01	HEAT SINK	105	4-665-227-02	SPACER TBR						
55	4-663-030-01	INSULATOR FIN									

*3 When replacing the part Ref No.4 or Ref No.24, replace them together.
In addition, select the same type of the parts ([CH] type or [JP] type) as that of the original model from which you remove the defective part.

*4 Two pieces of Ref No.13 are used. When you want to replace either one, select the same type of the parts ([CH] type or [JP] type) as you should replace both in the right and left.

3-3. Connector Section (CH Type only)



Ref.No.	Fig.	Part No.	Description
901		1-815-422-12	[CH]...CONNECTOR, USB (A) USB connector
902		1-779-745-21	[CH]...JACK, DC DC IN connector
903		1-816-371-11	[CH]...CONNECTOR, PC CARD (EJEC,RIGHT) PC Cord Slot connector
904		X-4624-710-1	[CH]...I/O BRACKET ASSY I/O Bracket
905		X-4624-725-1	[CH]...SIDE I/O BRACKET ASSY Side I/O Bracket

* Among the parts that are used on the boards of this model, only the connectors that are show in the list can be replaced.
(The parts other that the specified connectors cannot be replaced.)

List of PCG-NV Series (As of September, 2003)

Model Name	Service Manual Part No.
PCG-NV170P PCG-NV170 PCG-NV190 PCG-NV190P	9-874-535-07

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Revision History

Suffix	Ver.	Date	Contents	QM No.
-01	Ver. 1	2002.05.22	First Edition	
-02	Ver. 2	2002.07.01	① Front Page (Model Line Up), Page 3-3, Page 3-5, Page 3-6, Page 3-7, Page 3-8, Back Cover	N2002_065K
-03	Ver. 3	2002.07.26	② Front Page (Model Line Up), Page 3-3, Page 3-5, Page 3-6, Page 3-7, Page 3-8, Back Cover	N2002_073K
-04	Ver. 4	2002.09.30	③ Page 3-3	N2002_097K
-05	Ver. 5	2002.09.30	④ Page 3-3, Page 3-6	N2002_098K
-06	Ver. 6	2002.10.10	⑤ Page 3-4, Page 3-6	N2002_127CK
-07	Ver. 7	2003.08.22	⑥ Page 3-3, Page 3-4, Page 3-5, Page 3-8	N2003_060CK
< Remarks >				